

What is claimed is:

1. A multi-protocol receiver for receiving wireless transmissions comprising:

a plurality of RF receiver units each receiving a wireless signal and outputting a broadband IF signal;

at least one tunable down converter unit, each able to tune over a frequency range of all of said broadband IF signal of all of said RF receiver units, said tunable down converter units output raw I and Q signals;

at least one tunable filter receiving said raw I and Q signals from one of said at least one tunable down converter units and providing filtered I and Q output signals;

a switch for connecting a selected RF receiver unit to a selected one of at least one of said tunable down converter;

a management unit receiving a request for a specific frequency band and setting a tuning frequency of a selected one of a plurality of at least one tunable down converter unit, setting filter parameters of a selected one of a plurality of at least one of said tunable filter, and setting said switch.

2. The receiver as claimed in claim 1, further comprising a plurality of ADC units each connected to one of said RF units, wherein said switch connects a broadband digital output of said ADC units to said tunable down converter units.

3. The receiver as claimed in claim 1 wherein the management unit comprises:

a channel selection signal input;

a memory for storing said filter parameters for channels from said broadband IF signal of all of said RF receiver units and frequency parameters for all of said tunable down converter units and switch parameters;

an interpreter receiving said selection signal and setting said filter parameters, said tunable down converter, and said switch parameters based on data stored in said memory.

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4. The receiver as claimed in claim 2 wherein the management unit comprises:

a channel selection signal input;

a memory for storing said filter parameters for channels from said broadband IF signal of all of said RF receiver units and frequency parameters for all of said tunable down converter units and switch parameters;

an interpreter receiving said selection signal and setting said filter parameters, said tunable down converter, and said switch parameters based on data stored in said memory.

5. The receiver as claimed in claim 1 wherein there are at least two of said tunable down converter units in order to receive full duplex conversations.

6. The receiver as claimed in claim 2 wherein there are at least two of said tunable down converter units in order to receive full duplex conversations.

7. The receiver as claimed in claim 3 wherein there are at least two of said tunable down converter units in order to receive full duplex conversations, said memory for storing switch parameters provides information for allocating said at least two of said tunable down converter units to said full duplex conversations.

8. The receiver as claimed in claim 1, wherein a plurality of said RF units, each receives a portion of a single frequency band.

9. The receiver as claimed in claim 1, wherein a single frequency band, larger than one handled by a single one of said RF unit, is handled by a plurality of said RF units.

10. The receiver as claimed in claim 2 wherein said at least one tunable filter is an N tap FIR filter.

11. The receiver as claimed in claim 2 wherein said switch is an FPGA.

12. The receiver as claimed in claim 1 wherein each of said RF receiver unit handles at least 25 MHz bandwidth signal.

13. The receiver as claimed in claim 2 wherein each of said ADC units performs the conversion at a rate of at least 50 MHz.

14. A method for receiving a wireless communication with a device which comprises a plurality of RF receiver units, at least one tunable down converter unit, at least one tunable filter, a switch and comprising the steps of:

receiving a wireless signal from an antenna and outputting an IF broadband signal;

switching said switch in order to connect one of said RF receiver units to one of said tunable down converter units;

down converting the IF broadband signal to provide a raw I and Q signals;

filtering the raw I and Q signals to provide I and Q signals.

15. A method as claimed in claim 14 additionally comprising the step of:

digitizing said IF broadband signal by an ADC unit before said switching.

16. A method as claimed in claim 14 wherein the step of switching said switch is directed by a management unit.

17. A method as claimed in claim 15 wherein the step of switching said switch is directed by a management unit.

18. A method as claimed in claim 14 wherein a management unit and comprising the steps of:

receiving at least one selected channel input signal;

interpreting said received selected channel input signals to provide parameters for said at least one of said tunable down converter units, for said at least one of said tunable filter units, for said switch.

19. The management unit as claimed in claim 3 wherein the central processing unit is a Digital Signal Processor (DSP).